Haier

Computerized Automatic Washing Machine

SERVICE MANUAL

Models：XQJ60-31

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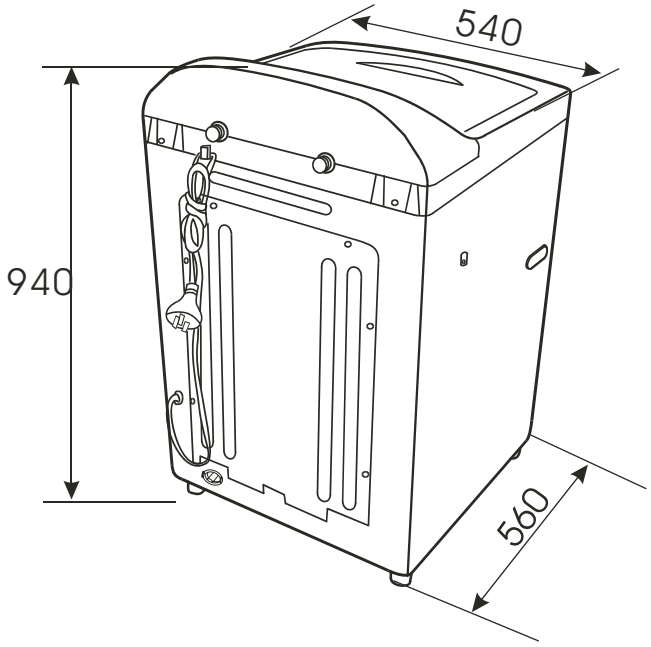
● Features:

- ●Top-head model,nice and elegant
- ●Soak wash，the wash result is more better
- ●Eccentric plusator，better effect

Special No.: HWM5TL Edition: 2006.07.08

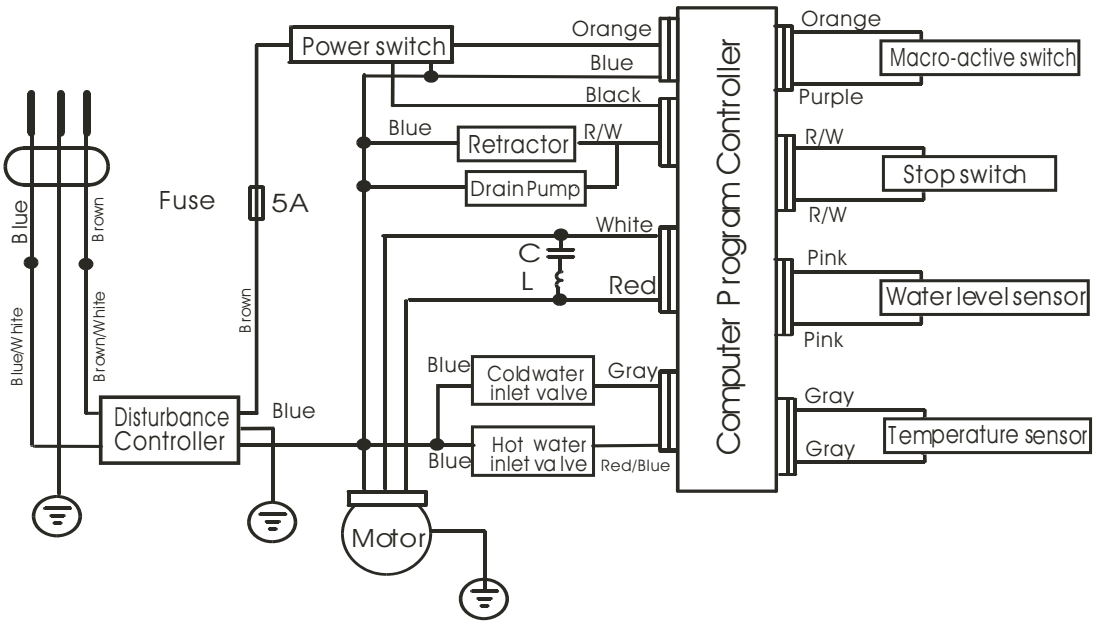
Model		HWM5TL		
Ratedvoltage *ratedfrequency		230-240V～ 50Hz		
Rated wash/spin capacity		5.0kg (weight of standard dry cloth)		
Water level and quantity of different wash capacity		Water level	Water quantity	Wash capacity
		Large	About 50L	3.5～4.5kg
		Medium	About 44L	2.0～3.5kg
		Small	About 35L	1.0～2.0kg
Standard water consumption		About 150L (Large water level, NORMAL program)		
Water inlet pressure		0.03Mpa～0.78Mpa		
Ratedpowerconsumption in washing		450W		
Ratedpowerconsumption in spinning		300W		
Washing method		Agitater current		
Spin-drying method		Centrifuge spinning		
Weight		About 37kg		
Dimension		L 540mm W 560mm H 940mm		
Programs	Full auto	HEAVY, NORMAL, GENTLE, QUICK WASH		
	Manual	Free selection on washing procedures (except QUICK)		
Safety specifications	Power source fuse	5A (interception on the whole circuit)		
	Motor	With auto-resetthermalprotectiondevice		
	Capacitor	with safeguardfunction		
Accessories		Water inlet pipe component, bottom plate, tapping screws, user's manual,		

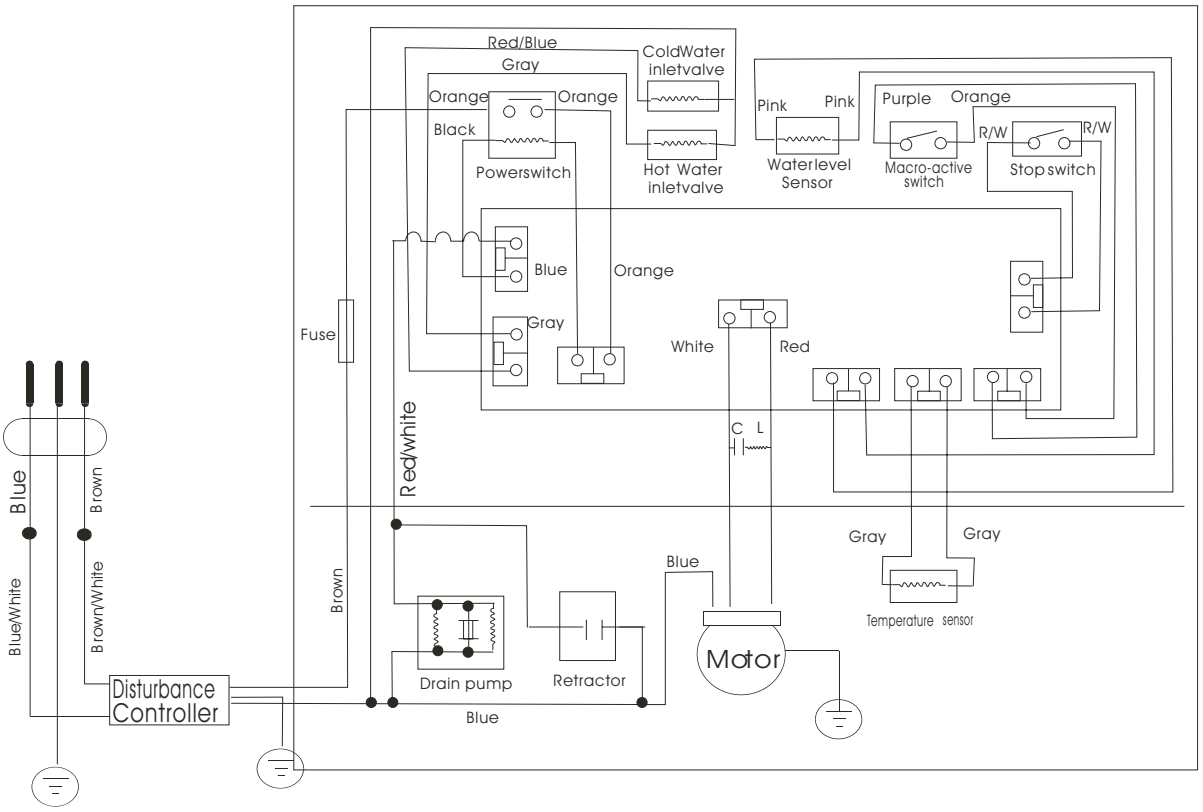


(Unit:mm)

Circuit Diagr am

The capacitor coil L is used to protect the circuit,please do not dismantle it

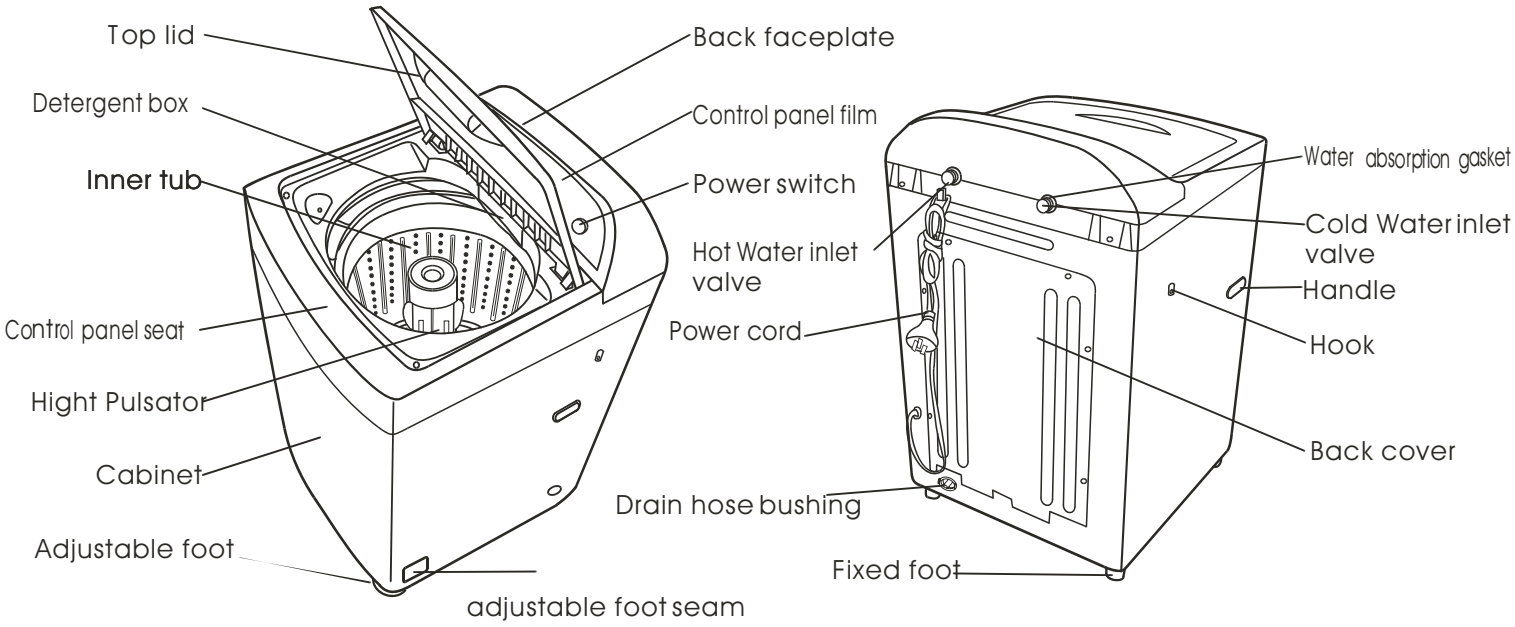




Control panel seat

Outer switch

Names of the parts



Indicator made and meaning

The indicator is off, indicating that the program or mode is not selected

The indicator is flashing, indicating the running program

The indicator is on, indicating the program or mode selected and about to run

"Temp select" button

- "Cool water" valve is set automatically when washer is started.
- Push down the button, three types of water inlet can be selected cold/cold, warm/warm, hot/cold. Pay attention to the water in drum not being
- over 50℃.

Cold/Cold	No requirement on water temperature
Warm/Warm	Temperature of warm water is high and need to mix with some cool water
Hot/cold	Temperature of warm water is suitable or higher water temperature in the drum is expected.

"Start/Pause" button

After switch on the power, push it once to start the washing machine

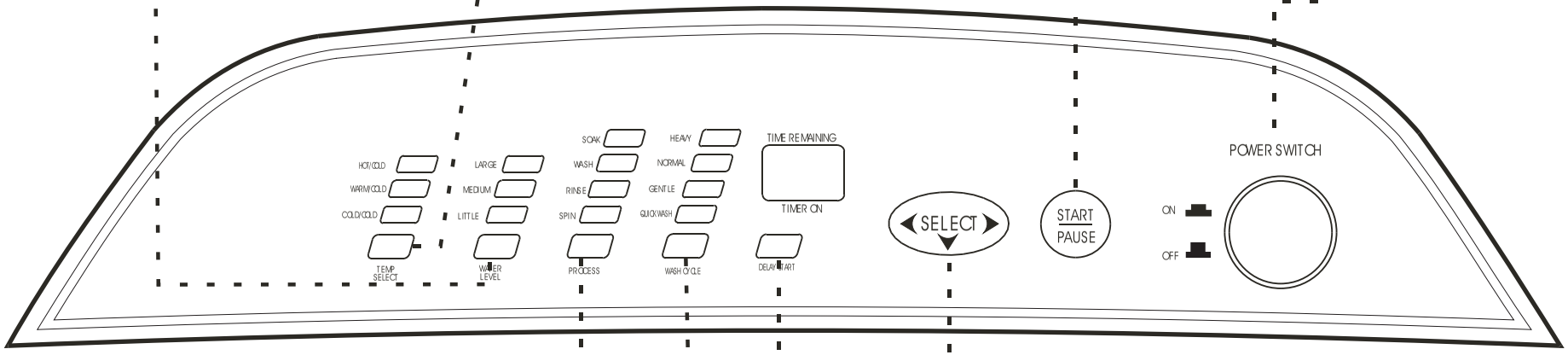
- In operating, push the button to pause the operating.
- In pushing, push the button to resume operating.

Power switch button

- Push the button once to switch on the power.
- When the power is on, push the button once to cut off the power.

Water level selection button

Push the button to select or adjust different water level.



Procedure selection button

Push the button to select one or more programs from soak, wash rinse and spin.

Program button

Select following four automatic programs with the button

Program	Applicable circumstances
Heavy	Washing the bigger, thicker or heavier dirty laundries
Normal	Common washing
Gentle	Washing the woolen textiles or underwear
Quick	Quick washing of the light dirty laundries

Delay start button

Push the button to select the reserve washing time among "4 hour" "8 hour" "12 hour" "24 hour"

Faction select button

Push "◀", "▼" or "▶" to select "wash cycle" "process" "water level" "temp select" four function.

<1>Product Briefs

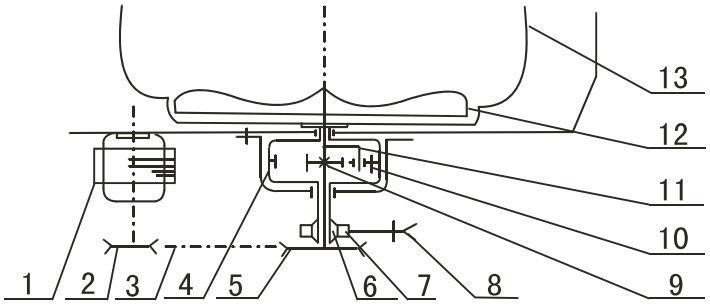
(1) Computersequencer

It adopts pouring seal with polyurethane on the surface. The light-emitting diode is sealed with insulation bushing to avoid humidity. To avoid splashing, the bottom of the control panel seat where the computer plate is installed adopts enclosed structure, and the surface of the operation components of the front control board is coated with control panel film.

(2) Structure of the top lid

intergrated top lid structure.

(3) Power transmission system



During washing, the rotation of Motor 1 is transferred to Follower 5 from Drive Wheel 2 through Belt 3. Meanwhile, Ratchet 7 will be braked by Pawl 8 through the action force of the spring, and the movement will be transferred to Center Gear 9, and then be retarded and transferred to Tie-rod 10 through a planetary gear mechanism consisting of Center Gear 9, Planet Gear 10 and Spin Shaft 4 (inner gear), then Tie-rod 10 is connected to Pulsator 12 via a spline shaft. Therefore, Pulsator 12 will move along with the clockwise and counterclockwise rotation of the Motor 1.

During spinning, the rotation of Motor 1 is transferred to Follower 5 from Drive Wheel 2 through Belt 3. Meanwhile, Pawl 8 will leave Ratchet 7 by the action of the puller. Clutch Reed 6 is twisted tightly on the down part of Spin Shaft 4. The Spin tub 13 is connected to Spin shaft 4 with flange. The movement of Motor 1 will be retarded by V-belt, and then transferred to Spin shaft 4 and make the Spin tub 13 to spin.

(4) Damping system

In installing the damping component, please note that the hangers at the motor side are different from those of the other side. The motor side shall use the yellow spring. The other shall use white spring.

(2) Major features

● Brand new appearance,top head modle:

The model is novel and unique,looks simple and reliable.

● "1+1" control,simple operation :

After the power is switched on,all of the operation can be performed with only two buttons.

●Automatic power-off function:

If the washing machine is not started after the power is switched on,or the washing is finished, The power will be switched off automatically after 5 minutes for the sake of safety.

● Low vibration and low noise:

The low noise retarder clutch, motor and the advanced air damping system can guarantee the washing machine operating under low vibration and noise.

● Alarm against breakdown:

The washing machine will alarm with abnormal display and buzzer when the drain hose is not put down, or when top lid is open, or the laundry is distributed unevenly when running Full-auto program or during spinning , or in case the imbalance cannot be corrected.

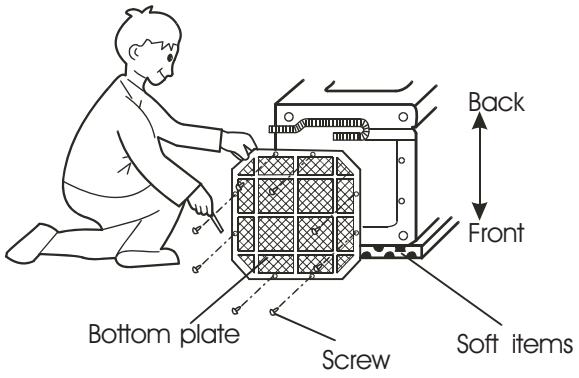
● Imbalance-revising function:

During spinning, if the laundries are slanting and bumping the tub, the washing machine will add one rinse procedures automatically to revise the imbalance.

Please install and adjust the washing machine according to the requirement of this manual. It is important for user's safe and proper using the machine.

Install the bottom plate

After you open the package, please lean the washing machine gently down on soft items (like the towel cloth, blanket, etc.). Install the bottom plate to the bottom of the machine with the eight screws by a cross screwdriver, then lift the machine up gently. See to the figure:

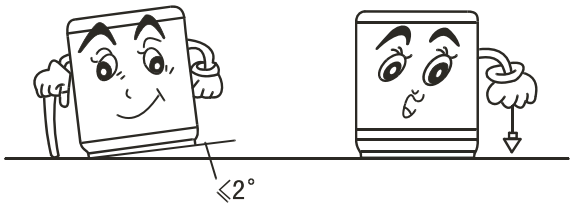


Adjust the installation position

The largest allowed slope of the base of the machine is 2° . The slanting or rough ground will result in unstable running or stoppage of the machine. Please adjust it with following methods:

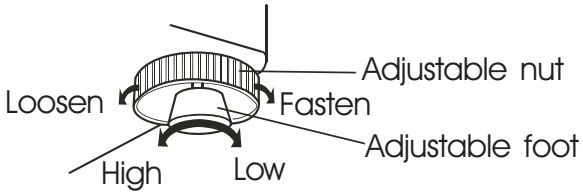
- Confirm it's horizontal:

Hang the lead line to confirm if it is horizontal.



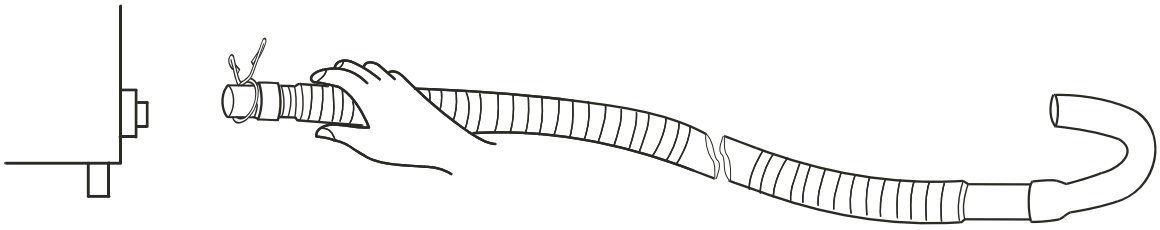
- Adjust the adjustable foot:

1. To twist the adjustable foot, please first lift up the side of the foot slightly, loosen the adjustable nut, and twist the foot.
2. Fasten the nut after adjustment.

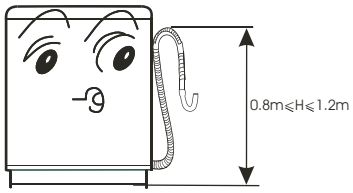


How to changethe direction of the drain hose

Cover outer drain hose to drain outlet of washing machineand fasten with drain hose clamp.



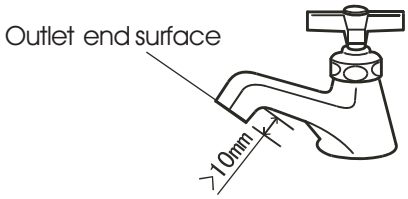
Usage of the drain hose



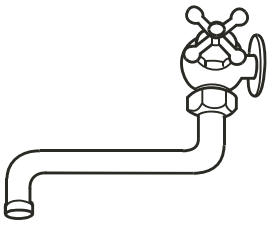
The drain hose must be hang up when using the washing machine. The high of the drain hose less than 1.2m.

Confirm the water faucet

Water faucet, suitable



Water faucet, not suitable



It is required that the front end shall be longer than 10cm.
The outlet end surface of the faucet shall be flat and smooth. If not please file it to avoid leakage.

Connection between the water inlet hose jointer and the water faucet

1.Press the lower end of the lock lever and push down the slider. Take off the water inlet hose jointer from the water inlet hose component.See to Figure 1.
2.Loosen the screw till the water faucet can be accessed. Put the jointer of the water inlet hose on the faucet. See to Figure 2. (If the faucet is too large and the jointer can not be set on the water faucet, please loosen the four screws and take out the bushing in the jointer. The front end of the faucet must be smooth, otherwise it may leak water. See to Figure 3.)

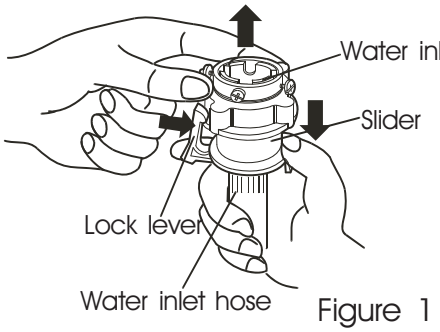


Figure 1

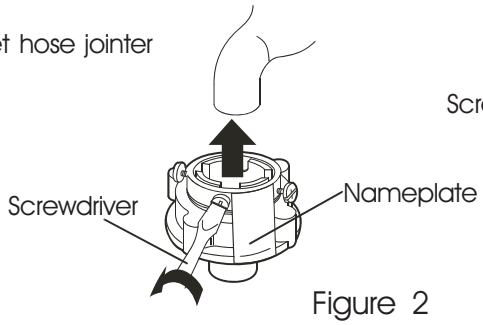


Figure 2

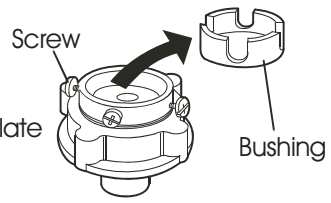


Figure 3

3.Fasten the four screws evenly. See to Figure 4.
4.Take off the nameplate. Twist the fastening nut as per the indication of the figure to seal up the outlet end surface of the faucet. See to Figure 5.
Remarks:
Before installation, the threading is 4mm above the upper surface of the nut. After installation, the threading is 2mm above the upper surface of the nut. See to Figure 6.

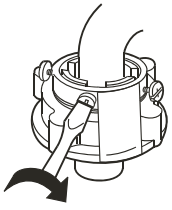


Figure 4

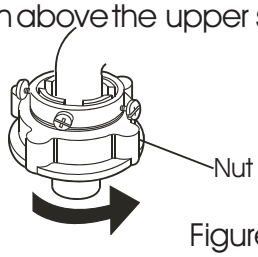


Figure 5)

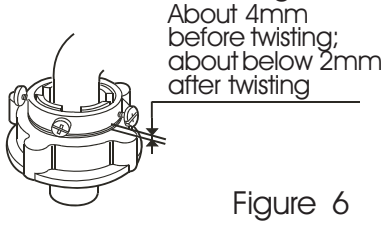
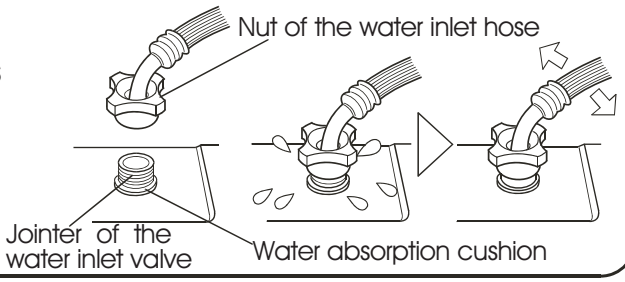


Figure 6

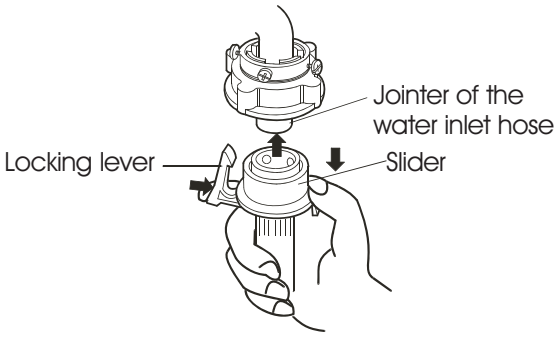
Conn ectio n betwee n the water in let hose and the washin g machin e

1.Do not take off the water absorption cushion. Please check if the cushion is dropped or damaged before each usage. If it happens please contact our after-sale department immediately.
2.Put the nut of the water inlet hose on the valve jointer.
3.Fasten the nut. Swing it gently to confirm if it's suitable.



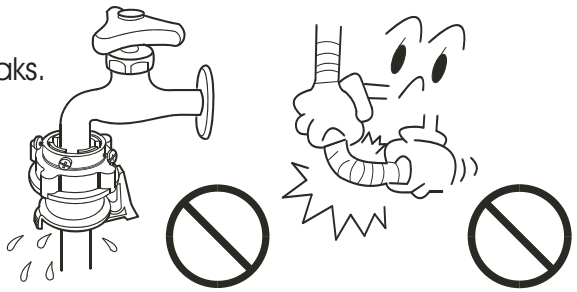
Connection between the join ter of the water inlet hos e and the water inlet hos e

1.Push down the slider. Insert the water inlet hose into the jointer.
2.Hang the lock lever to the jointer. Release the slider till a click sound is heard.



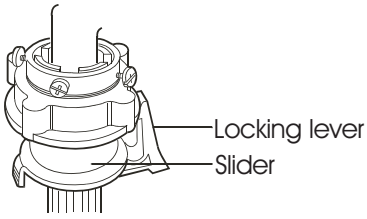
Check the connection between the jointer of the water inlet hos e and the water faucet

1.Swing the hose gently to confirm if it is fastened stable.
2.After installation, open the faucet to check if it leaks.
3.Do not bend the hose with overstrain.
4.Each time before use please check if the connection between the jointer of the water inlet hose and the water faucet, and the installation of the water inlet hose are firm, so as to prevent dropping from improper installation position.



Dismantle the water inlet hose

1.Close the water faucet.
2.Press the locking lever. Push down the slider . Then pull off the water inlet hose. If the machine is used more than once every week, the jointer of the water inlet hose can be kept on the faucet to prevent damaging the fixing screw.



2. Key points in Disassembly

Points of attention in maintenance

(1) General attention

- Be sure to pull off the power plug in disassembly or maintenance.
- The wiring between the conduction wires mostly adopts AMP terminal. Keep the terminal in good condition during dismantling or maintenance.
- In inserting the conducting wires, be sure to plug the pins to the root and make it hard to be pulled out.
- If welding is needed, be careful not to touch the plastic or other insulation parts with the iron.
- When connecting the wires, be sure to keep the wire away from the mobile parts like the belt, radiating pulley and jib etc., and the sharp protruding parts and the parts with high temperature (motor). Connect and fix the wires as per their original mode.
- If there's metal object at the wire fixing point, be sure to insulate with insulation materials.
- Retain the dismantled screws for future usage in installation.

(2) Points of attention in usage of electric components

- In case that the power is on, the earthing circuit of the computer sequencer can have 220V voltage to earth. Take care not to get electric shock.
- Store the computer sequencer and driver under 4℃-30℃. Avoid direct sunlight.
- In trouble-shooting, it may require hot-line work. Please be extremely careful to avoid electric shock.

<1>The part of control panel seat

(1) Method of opening the control panel

a. Open the back cover. Loosen the two locking belt fixed on the cabinet (used in inner wiring), to loosen the inner wiring.

b. Loosen the four screws used to install the control panel seat , lift the control panel from rear to up forwards to dismantle it from the cabinet. Then move it forwards several times to pull the control panel seat to the rear side.

Attention:

- Do not lift the control panel seat by force, otherwise the control rod may get transformed, and the jointer part of the connecting pipe of the water level switch may be loosened, or the connecting pipe may be broken and leak gas.
- After opening the control panel seat, hold it with one hand or lean it on supporter like the wall. Do not put it down. Otherwise it may pull the wire unit and connecting pipe.

(2) Points of attention in assembly:

- Fix the wiring in the control panel seat to its original position. Do not make it touch sharp corner and mobile position. The space surrounding the computer sequencer is rather narrow. Please dispose it carefully and do not make the wire squeezed into the gap between the front control board and the control panel seat.

- When installing control panel seat to cabinet, please check if it is correct .

<2>The cabinet and outer tub component

(1) Method of disassembling

a. Loosen the two motor bolt unit to dismantle the motor. To adjust the tension of the belt, loosen the bolts and move the motor left and right.

b. Loosen the four fastening screws to dismantle the Transisting guard shield.

c. Loosen the two fastening bolts and dismantle the axis to dismantle the Electro-magnet iron.

d. In dismantling the drain valve, first loosen the screws, then rotate combination part with the drain hose, overflow hose and outer tub slowly to make it loose. Then dismantle the drain valve.

e. In dismantling the inner tub, first take off the outer tub cover, then dismantle the pulsator, finally dismantle the inner tub. Handle with care when taking the inner tub off from the outer tub.

(2) Points of attention in assembly

- In installation of the drain valve, please smear a piece of 801 glue at the connection part between the drain valve and outer tub and between the overflow hose and drain hose to guarantee that the drain valve will not leak.
- Take care not to scratch the cabinet and influence the appearance of the machine.
- In fastening the screws, make it tight without sliding.

1. Trouble alarm and solve method

Phenomenan	The reason	How to settle
In spinning after washing and rinsing, the machine stops running.	● The top lid is not closed.	● Close the top lid.
The draining does not work, (The WASH,RINSE and SPIN indicator flash and alarming 10 seconds)	● Is the drain hose blocked by foreign material?	● Clean the foreign material and push START/PAUSE button
The safety switch acts. The spinning can not work (The WASH,RINSE and SPIN indicator flash and alarming 10 seconds) If trouble can not be solved after alarming, it will alarm again every a few minutes.	● Are the laundries put slantingly? ● Is the machine slanting?	● Re-order the laundries. Close the top lid. ● Level the machine in right position. After about 10 seconds,it will start .

2. Test program (test without water)

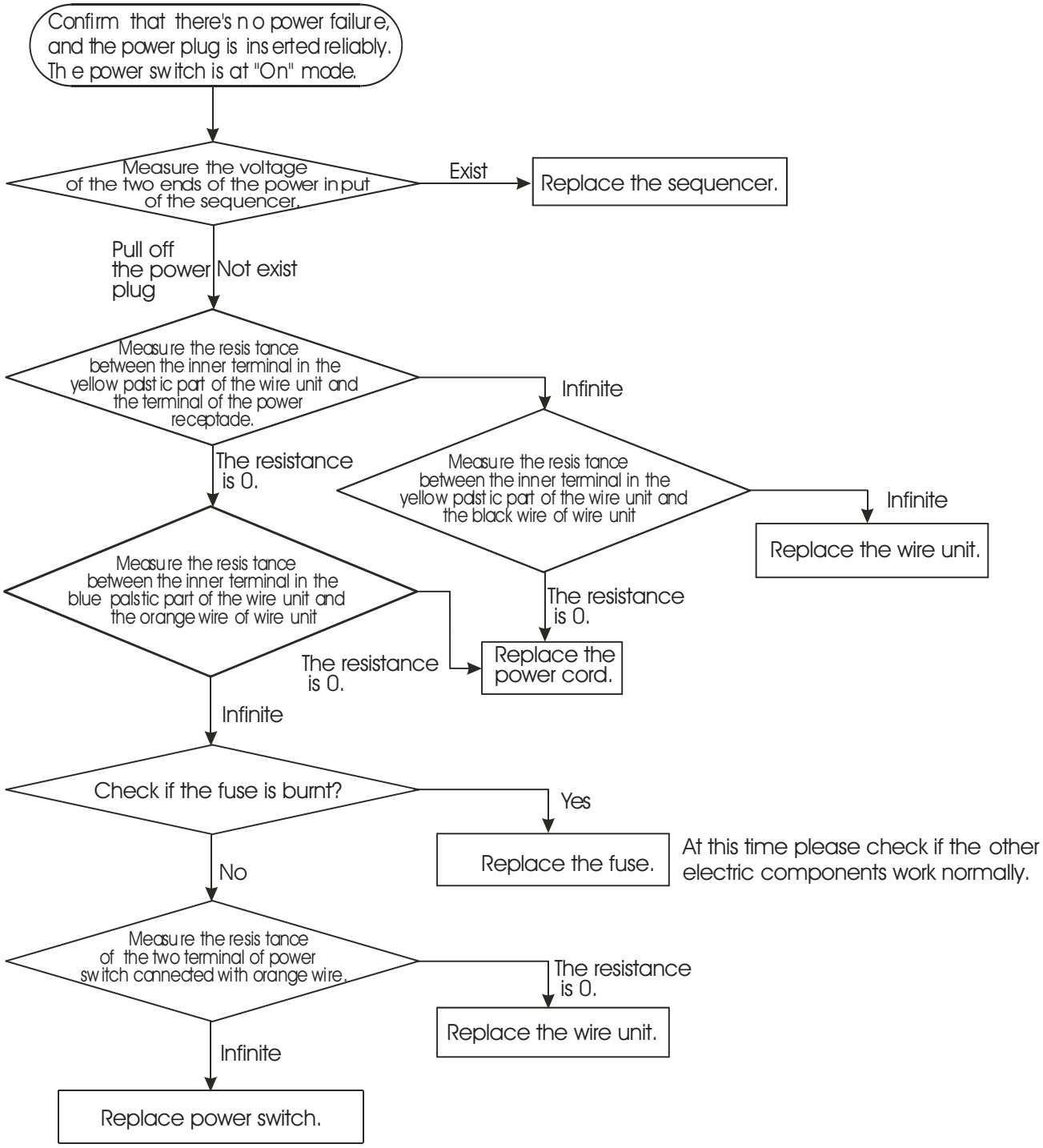
Push and hold the "PROGRAM SELECT " and "PROCEDURE SELECT " buttons, then push down the power switch to enter buzzer Test program. Push the "PROCEDURE SELECT " to select wash Test program and spin Test programs.

Test name	Test content
Buzzer Test program	The buzzer rings once. All of the indicators flash . After 3 seconds, all of the indicators flash and the buzzer rings intermittebtly 3 times(0.3s connected,0.3s shutoff). The power is switched off automdically after finishing.
Wash Test program	The "WASH" indicator flashes; the "standard" indicator is on. Run washing with water for 5 minutes. During washing, you can change the current selection by the "program select" button
Spin Test program	The "standard" indicator is on; "wash" and "rinse" indicators flash. Run spinning without water for 5 minutes. The alarm during that procedure is the same as the alarm in normal spinning program.

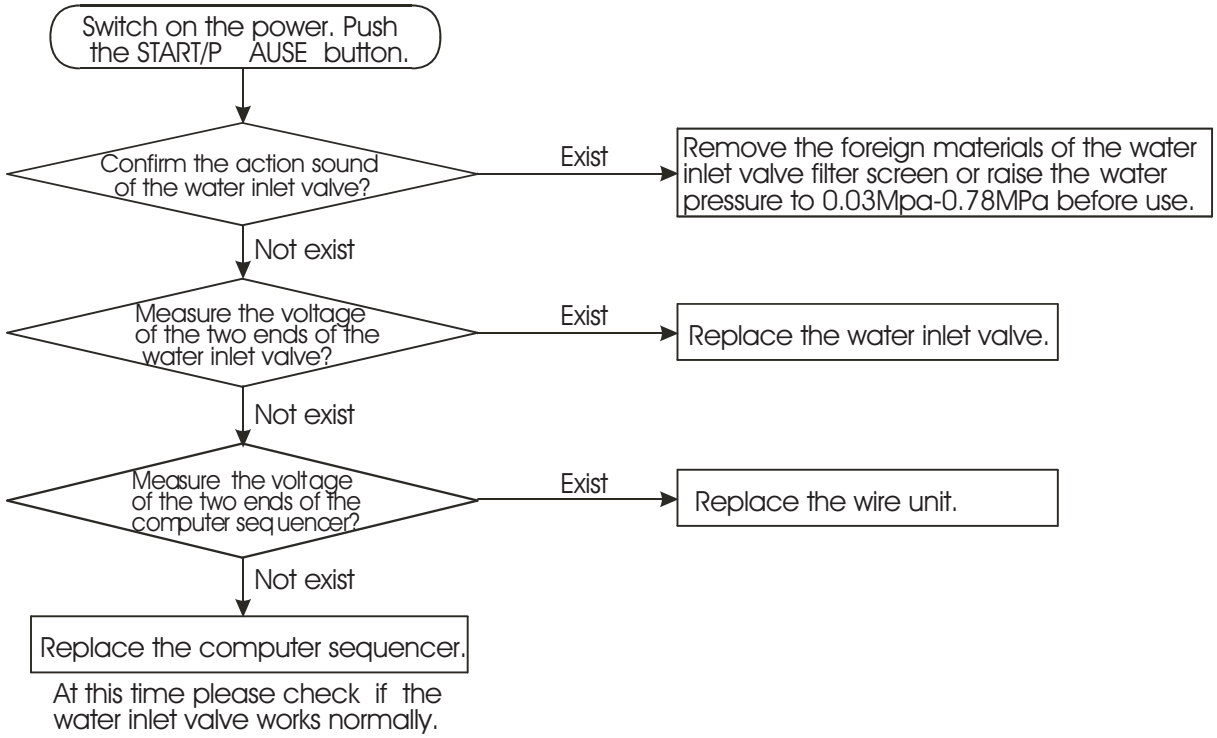
3. Trouble-shooting charts

If you replace the computer sequencer without checking the other components carefully, the computer sequencer may be damaged again. Therefore, please first check if the other components working normally before replacing the computer sequencer in maintenance.

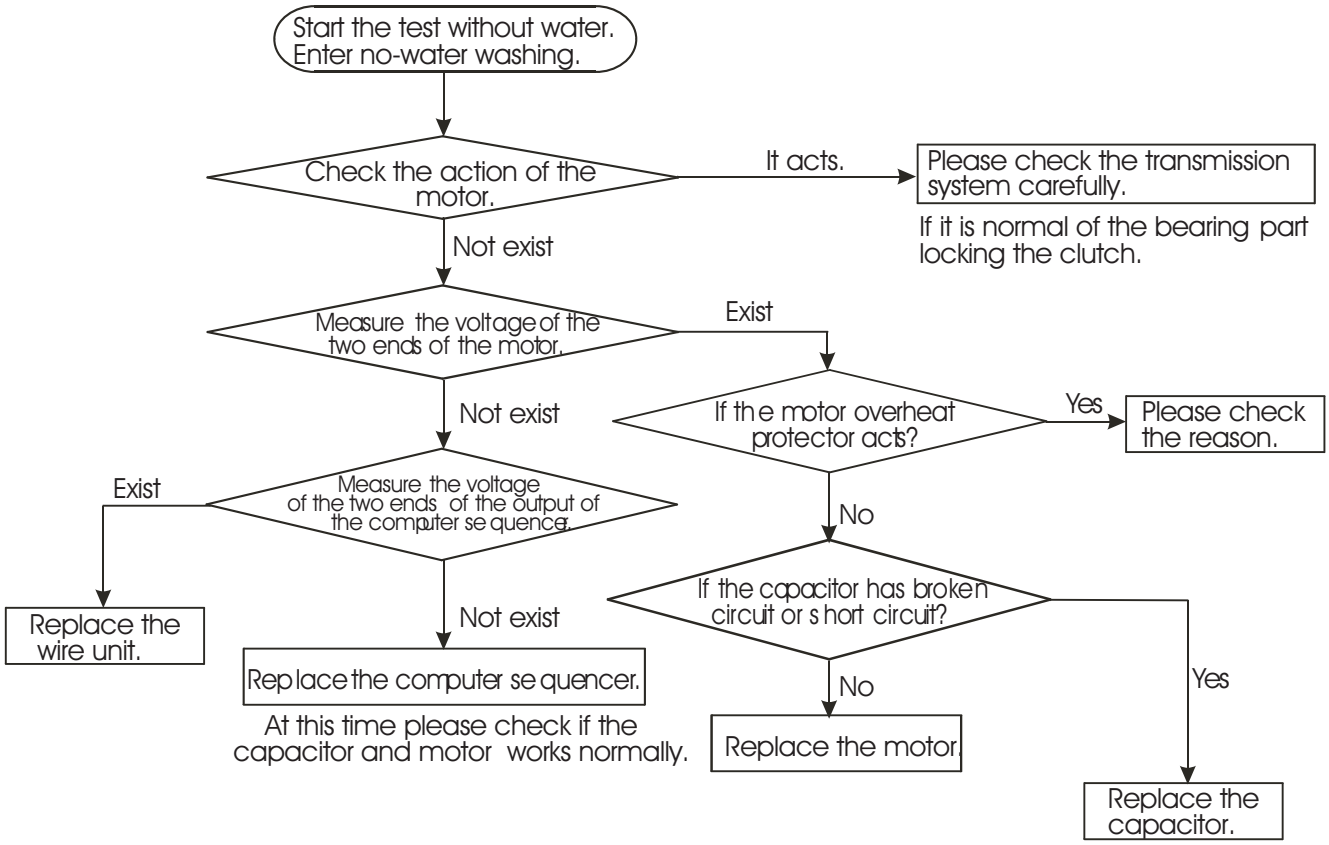
1. No action(The indicator is off)


Confirm that there's no power failure, and the power plug is inserted reliably. The power switch is at "On" mode.
Measure the voltage of the two ends of the power input of the sequencer.
Exist
Replace the sequencer.
Pull off the power plug
Not exist
Measure the resistance between the inner terminal in the yellow palstic part of the wire unit and the terminal of the power receptade.
Infinite
The resistance is 0.
Measure the resistance between the inner terminal in the yellow palstic part of the wire unit and the black wire of wire unit
Infinite
Replace the wire unit.
Measure the resistance between the inner terminal in the blue palstic part of the wire unit and the orange wire of wire unit
The resistance is 0.
Replace the power cord.
The resistance is 0.
Infinite
Check if the fuse is burnt?
Yes
Replace the fuse.
At this time please check if the other electric components work normally.
No
Measure the resistance of the two terminal of power switch connected with orange wire.
The resistance is 0.
Replace the wire unit.
Infinite
Replace power switch.

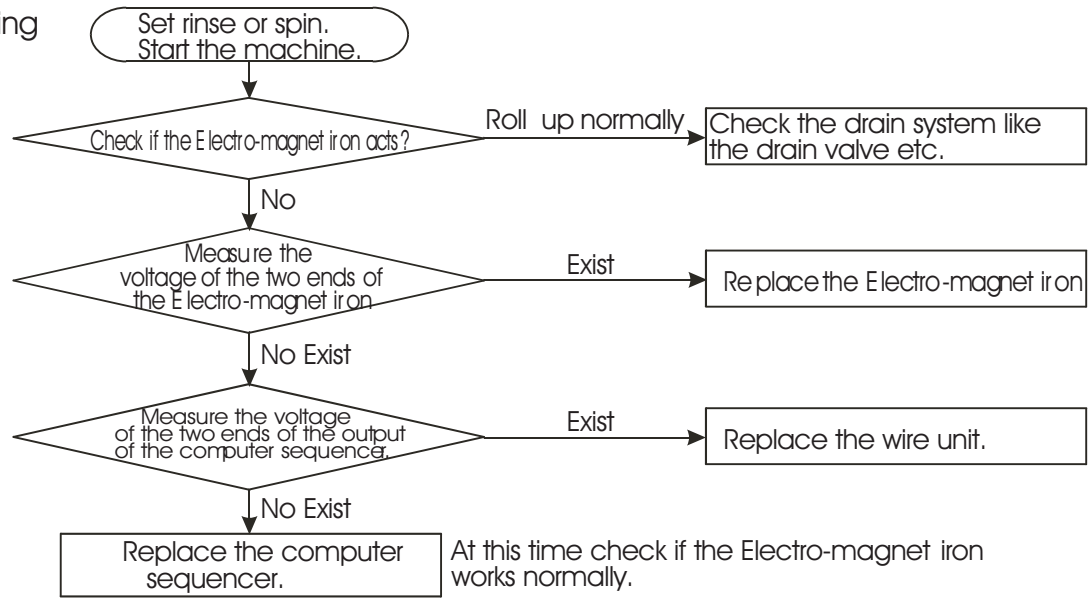
2. No water filling


Switch on the power. Push the START/P AUSE button.
Confirm the action sound of the water inlet valve?
Exist
Remove the foreign materials of the water inlet valve filter screen or raise the water pressure to 0.03Mpa-0.78MPa before use.
Not exist
Measure the voltage of the two ends of the water inlet valve?
Exist
Replace the water inlet valve.
Not exist
Measure the voltage of the two ends of the computer sequencer?
Exist
Replace the wire unit.
Not exist
Replace the computer sequencer.
At this time please check if the water inlet valve works normally.

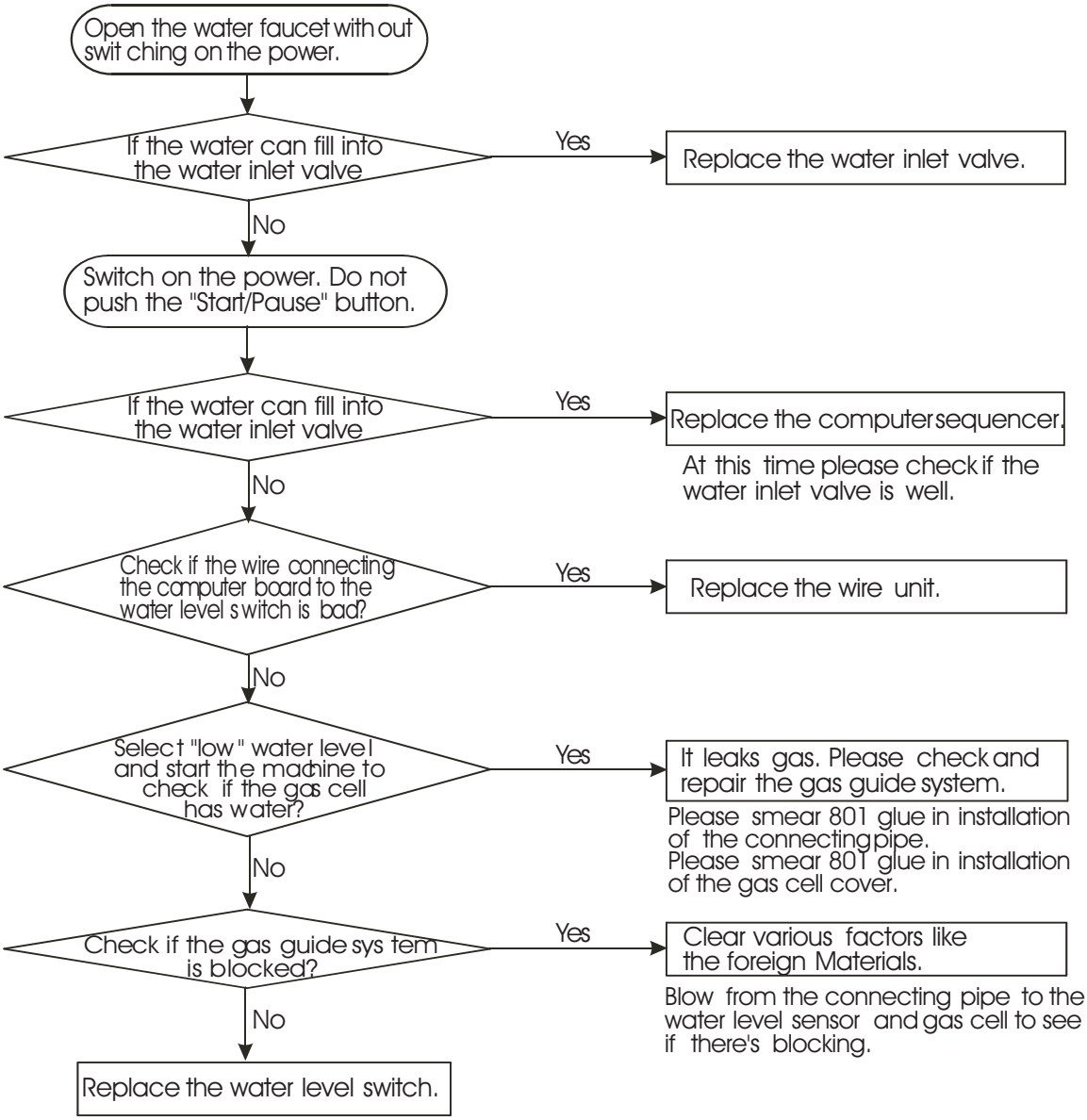
3. No rotation in washing (or rotate to one direction only)


Start the test without water. Enter no-water washing.
Check the action of the motor.
It acts.
Please check the transmission system carefully.
If it is normal of the bearing part locking the clutch.
Not exist
Measure the voltage of the two ends of the motor.
Exist
If the motor overheat protector acts?
Yes
Please check the reason.
Not exist
Exist
Measure the voltage of the two ends of the output of the computer sequence.
No
If the capacitor has broken circuit or short circuit?
Replace the wire unit.
Not exist
Replace the computer sequencer.
At this time please check if the capacitor and motor works normally.
No
Replace the motor.
Yes
Replace the capacitor.

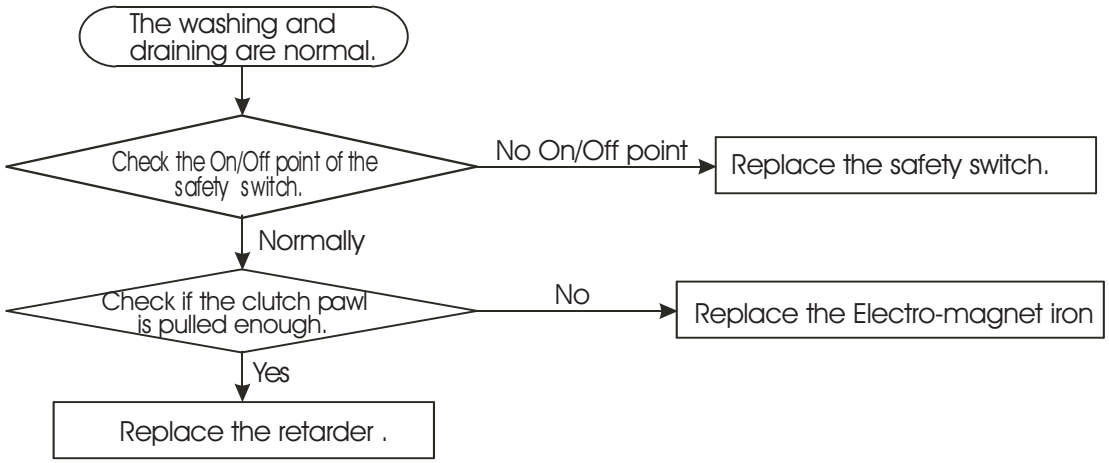
4. No draining


Set rinse or spin.
Start the machine.
Check if the Electro-magnet iron acts?
Roll up normally
Check the drain system like the drain valve etc.
No
Measure the voltage of the two ends of the Electro-magnet iron
Exist
Replace the Electro-magnet iron
No Exist
Measure the voltage of the two ends of the output of the computer sequencer.
Exist
Replace the wire unit.
No Exist
Replace the computer sequencer.
At this time check if the Electro-magnet iron works normally.

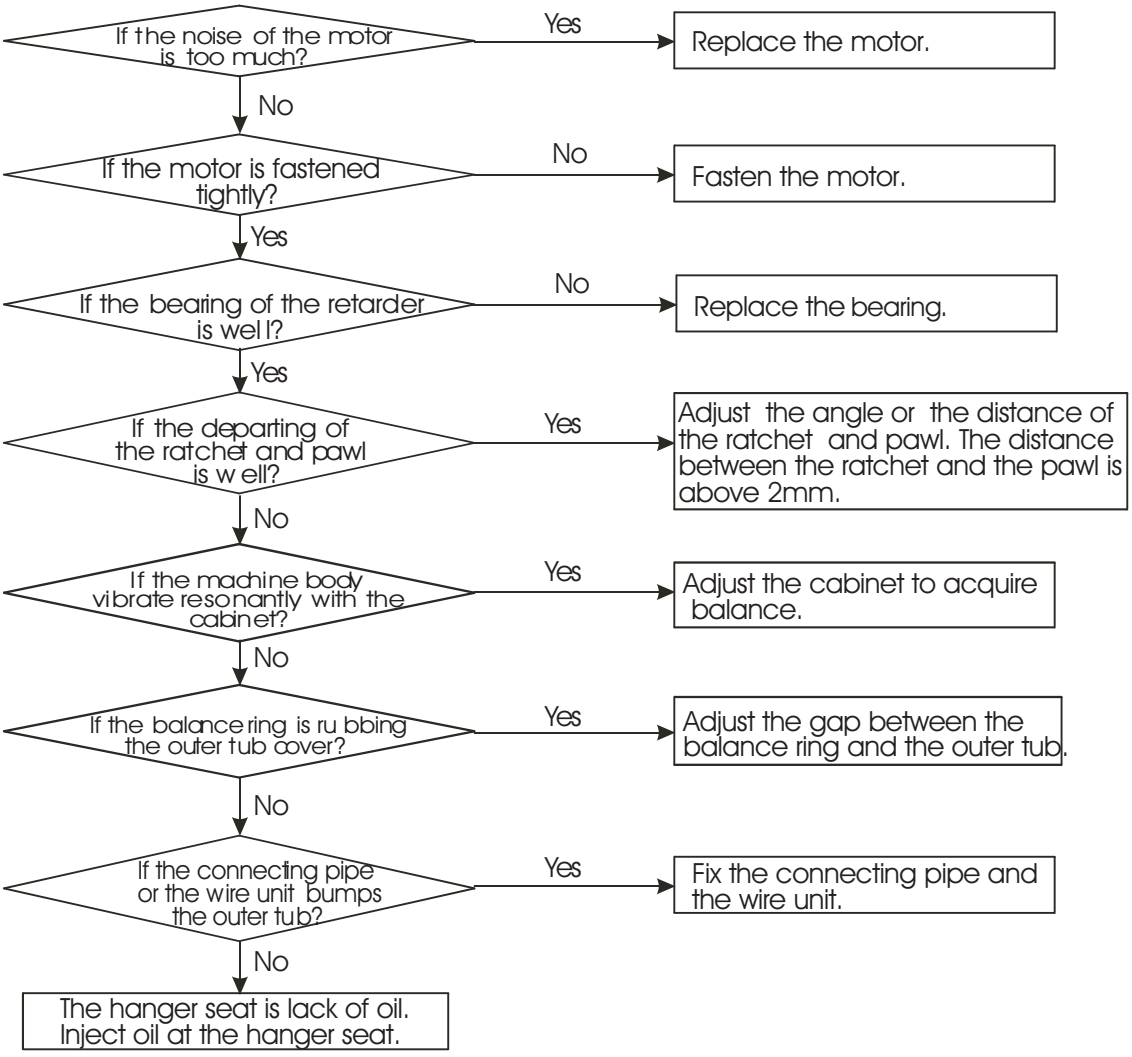
5. Keep filling water


Open the water faucet without switching on the power.
If the water can fill into the water inlet valve
Yes
Replace the water inlet valve.
No
Switch on the power. Do not push the "Start/Pause" button.
If the water can fill into the water inlet valve
Yes
Replace the computer sequencer.
At this time please check if the water inlet valve is well.
No
Check if the wire connecting the computer board to the water level switch is bad?
Yes
Replace the wire unit.
No
Select "low" water level and start the machine to check if the gas cell has water?
Yes
It leaks gas. Please check and repair the gas guide system.
Please smear 801 glue in installation of the connecting pipe.
Please smear 801 glue in installation of the gas cell cover.
No
Check if the gas guide system is blocked?
Yes
Clear various factors like the foreign Materials.
Blow from the connecting pipe to the water level sensor and gas cell to see if there's blocking.
No
Replace the water level switch.

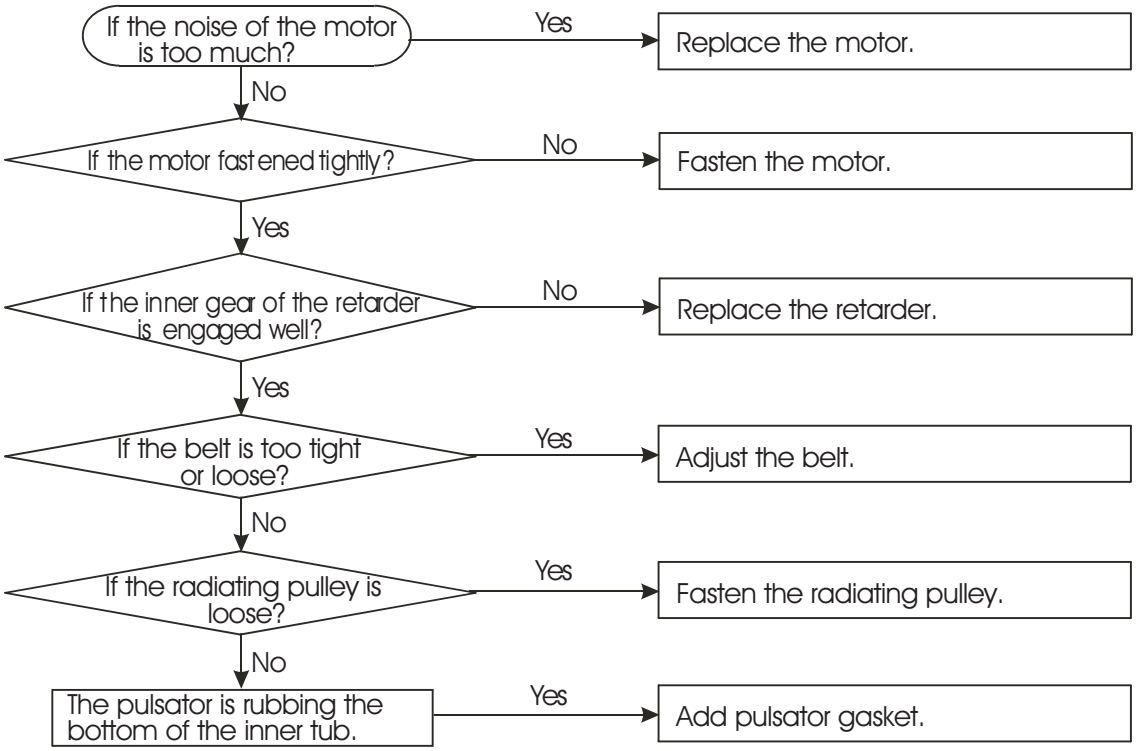
6. No spinning


The washing and draining are normal.
Check the On/Off point of the safety switch.
No On/Off point
Replace the safety switch.
Normally
Check if the clutch pawl is pulled enough.
No
Replace the Electro-magnet iron
Yes
Replace the retarder .

7. Too much spinning noise


If the noise of the motor is too much?
Yes
Replace the motor.
No
If the motor is fastened tightly?
No
Fasten the motor.
Yes
If the bearing of the retarder is well?
No
Replace the bearing.
Yes
If the departing of the ratchet and pawl is well?
Yes
Adjust the angle or the distance of the ratchet and pawl. The distance between the ratchet and the pawl is above 2mm.
No
If the machine body vibrate resonantly with the cabinet?
Yes
Adjust the cabinet to acquire balance.
No
If the balance ring is rubbing the outer tub cover?
Yes
Adjust the gap between the balance ring and the outer tub.
No
If the connecting pipe or the wire unit bumps the outer tub?
Yes
Fix the connecting pipe and the wire unit.
No
The hanger seat is lack of oil. Inject oil at the hanger seat.

8. Too much noise in washing



Sincere Forever

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